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AREAS OF AMERICAN CULTURE CHARACTERIZATION TENTATIVELY OUTLINED AS AN AID IN THE STUDY OF THE ANTIQUITIES¹

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INTRODUCTION

AS an initial step in the description and interpretation of the antiquities of the continent, the archeologist observes the tribes of today, their cultural characteristics and environments, and acquaints himself with what is known of them historically. He finds that their achievements are greatly diversified and that certain forms and states of culture characterize particular geographical areas and realizes that environment has had a large share in determining the course of the culture evolution. He examines the antiquities and finds that analogous geographical distinctions characterize the material culture of the past and reaches the conclusion that the relations of environment to man and culture

¹ The present paper is extracted from a work now in course of preparation which is intended to bring together in comprehensive form the antiquities of the continent; it is thus not complete in itself. The several areas are tentatively outlined to facilitate descriptive and comparative studies of the numerous classes of artifacts; and the brief sketches here presented are intended to familiarize the reader and student with the field as a whole and with the relative culture status of its more important subdivisions.

must play an important part in the prosecution of his researches and in the analysis of aboriginal history.

In the practical work of museum classification and arrangement—a work which has served in part to give form to this writing—archeological materials are necessarily grouped primarily by continents and other natural divisions, and secondarily by political divisions, such as states and territories. Separation by the larger natural divisions is always necessary, but separation by ethnic areas, or areas of culture characterization, as they are sometimes called, is most advantageous. These areas may be large or small according to the understanding or the needs of the student. By their means he approximates the real or natural grouping of the material traces of human achievement and studies to advantage culture and culture relationships and the causes of the resemblances and differences everywhere met with. The geographical limitations of culture units are, as a matter of course, not usually well defined. Cultures are bound to overlap and blend along the borders and more especially along lines of ready communication. But notwithstanding this, certain characteristics of achievement or groups of culture traits within each area will be found to separate it from its neighbors and afford effective means of comparison with other culture groups. In the present work, keeping in view the archeological rather than the ethnological evidence, it is convenient to recognize eleven areas north of Mexico (pl. xxxii), namely: (1) The North Atlantic area; (2) The Georgia-Florida area; (3) The Middle and Lower Mississippi Valley Region; (4) The Upper Mississippi and Lakes Region; (5) The Plains and Rocky Mountains; (6) The Arid Region; (7) The California Area; (8) The Columbia-Fraser Area; (9) The Northwest Coast Area; (10) The Arctic Coastal Area; (11) The Great Northern-Central Area. To these may be added (12) The Hawaiian Islands; and (13) The West Indies. These areas are here made as few and simple as possible to avoid too great complexity in conducting comparative studies of the several classes of antiquities.

The Middle and South American areas, also outlined on the broadest possible plan, are as follows: (1) Northern Mexico; (2)



CULTURAL CHARACTERIZATION AREAS OF NORTH AMERICA AS SUGGESTED BY A COMPARATIVE STUDY OF THE ANTIQUITIES

Middle Mexico; (3) Southern Mexico; (4) The Maya Provinces; (5) The Central American or Isthmian Region; (6) The North Andean-Pacific Area; (7) The Middle Andean Pacific or Incan Area; (8) The South Andean-Pacific or Chilean Area; (9) The Amazon Delta Area; (10) Primitive South America, Northern Division; (11) Primitive South America, Southern Division. Detailed study of the antiquities and history of these vast regions might profit even in the initial stages of research work by further subdivision of the areas, but in the present restricted state of our knowledge this would not prove greatly advantageous, as it would prolong the summary review here contemplated without an equivalent in useful results.

These areas in all cases are based on the clearly manifested phases of their culture content. In some areas evidence has been reported of early cultures radically distinct from the type adopted as characteristic of the areas, and ancestral forms grading into the later and into the historic forms are thought to have been recognized. In these particular branches of the research, however, haste must be made slowly as the utmost acumen of the student is called for in making areal and chronological discriminations. It is anticipated, however, since the period of occupancy of the continent must have been of long duration, that not only early but more elementary cultures may in good time be identified.

Within the region north of Mexico the culture of the most advanced communities rises high in the scale of barbarian achievement—a status characterized by an artificial basis of subsistence, sedentary life, successful agriculture, and extensive town building, yet still far below the culture level of glyphic writing reached by the more advanced tribes of Middle America. Pictographic records carved on stone, engraved or painted on bark, and painted on surfaces of many kinds, were almost entirely pictorial or graphic, slight advance having been made in the use of purely conventional characters, save as separate symbols or as ornamental designs. The lowest stage ranges well down in savagery where art in stone in its rudimentary forms had barely obtained a sure foothold, as with the Seri and other Lower Californians.

In Middle and especially in South America the culture contrasts are even greater, and nations standing upon the very threshold of civilization, with arts, industries, and institutions highly developed, are in close juxtaposition with utterly savage tribes to which even clothing and stable dwellings are practically unknown. With the exception of a limited group at the mouth of the Amazon, the more advanced cultures were confined to the west coast and the Andean plateaus, where forests are rare and deserts common, while the primitive status was and is yet found in places throughout the vast forest regions of the eastern slope of the Andes and the Orinoco-Amazon region, in the broad pampas of Brazil, Paraguay, and Argentina, and on the entire Atlantic coastal border from Panama to Tierra del Fuego, excepting always the limited areas about the delta of the Amazon.

These differences in culture status appear to be due to a complex of causes not readily analyzed. Whatsoever the nature of the molding agencies, they have acted to diversify, differentiate, and individualize cultures in a most pronounced manner throughout the two Americas, and the results, as suggested by a study of the several areas, are among the most striking and scientifically important features of our aboriginal ethnology.

The following sketches do not assume to approximate complete presentation of the cultural remains of the several areas; they are merely intended to cultivate familiarity with the vast field as a whole and to lay out its great features tentatively as an aid in describing and comparing the antiquities and the cultures they represent. It is by no means assumed that the culture phenomena of any considerable area are uniform throughout. There may be much diversity, possibly great complexity of conditions. There may be a number of somewhat independent centers of development of nearly equal importance, or a single center may have spread its influence over a wide area. The mapping of the cultures will, in the end, take forms that cannot now be foreseen. When all available relics of antiquity have been considered and their history and distribution recorded, discussion of the culture complex may be taken up to advantage, and, enforced by the somatic evidence and

illuminated by the researches of ethnology, may round out the history of man in America with gratifying fullness.

THE NORTH ATLANTIC AREA

The north Atlantic characterization area, as outlined for present purposes, extends from Newfoundland and the St Lawrence valley on the north to Georgia on the south. It includes eastern Canada, New England, New York, Pennsylvania, Maryland, and large portions of Virginia, West Virginia, and the Carolinas. It is a region of splendid forests, rugged highlands, charming valleys, and a diversified coast line indented by many tidewater inlets, and the aborigines, largely of the Algonquian, Iroquoian, and Siouan stocks, were primarily hunters and fishers, although agriculture was practised successfully in many of the fertile valleys. The native culture of both colonial and precolonial times, so far as known, though varying with the widely distributed centers of habitation, was quite uniform in grade and general characteristics. It is well differentiated from that of the south and middle west, but passes with no abrupt change into that of the upper lakes and the great interior region of the north. The changes from north to south were due in large measure to differences in food resources and the influence of neighboring cultures.

The use of stone in building was practically unknown, the dwellings being constructed of bark and mats, and stockades were relied upon for village defense. Burial mounds and other earthworks in the area are rare or insignificant in size, save where the influence of the Mississippi valley culture was felt along the western border, but the shores are lined with shell-heaps often of great extent. Methods of burial were primitive and considerably varied, and the graves yield many examples of the simple artifacts employed by the people. Numerous caves and rock-shelters were occupied for dwelling and burial.

The ceramic art was in a somewhat rudimentary stage, although considerable skill and taste were displayed by the Iroquois in the manufacture of culinary utensils and tobacco pipes of clay. The vessels are round-bodied and often conical beneath, adapted thus

to earthen floors, and were decorated with incised lines forming simple geometric figures, with fabric or cord impressions, and often, among the Iroquois, with crude figures in relief. The tobacco pipes of this people are varied in form and elaborately embellished with modeled life forms. The Virginia clay pipe with long stem and upturned bowl, carried to England by the early colonists along with the first tobacco, gave form to the common clay pipe which prevails even today in the English-speaking world.

Of implements of pecked and polished stone, the grooved ax, celt-hatchet, chisel, pick, gouge-adz, mortar, pestle, slate knife, slate spearhead, and hammerstone are present in large numbers, and articles of faith and ornament include bannerstones, bird-shaped stones, plummets, tubes, pierced gorgets, etc. Chipped implements of all ordinary types are well made and plentiful, as are also shell beads, pins, and pendent ornaments. The engraved conch-shell gorgets of Virginia and the Carolinas are of particular interest, but it is probable that these should be regarded as culture intrusions from the west.

The tribes of this region surpassed their neighbors in the manufacture of a few varieties of artifacts only; their gouge-adz takes first rank among implements of this general class. Within the area there are a number of local features of particular interest, some of which are due to the occurrence of mineral deposits of exceptional character, while others are due to ethnical conditions not at present fully determined. Maine has furnished a group of relics of exceptional character, most noteworthy of which are certain long, slender celts and gouge-adzes, and ground and polished lance-heads, discovered and described by Willoughby and tentatively ascribed by him to some pre-Algonquian people. The occurrence of red oxides with the burials has led to the use of the designation "the Red Paint people." The resemblance of the lance-heads to those of the Eskimo and even to those of northern Europe and Asia is noted. The occurrence in New England and the eastern Lakes region of examples of the ground spearhead and the broad-bladed slate knife, the woman's knife of the Arctic, is also worthy of remark.

Deposits of soapstone occur throughout nearly all the states from Massachusetts to Georgia and were extensively worked by the aborigines for the manufacture of cooking utensils, tobacco pipes, and articles of ornament, and the stone pick-axes and chisels used in cutting out and shaping these articles constitute a unique feature in American archeology. Mica was mined extensively in Virginia and North Carolina, and quarries of argillite, jasper, and rhyolite are found in Pennsylvania, and of quartz and quartzite boulder deposits in the District of Columbia. From the materials obtained in these quarries and from other widely distributed sources of supply vast numbers of chipped implements were made, as would be expected with a forest people devoted to war and the chase. It is stated that a single collector amassed, largely within the limits of a single county in South Carolina, twenty bushels of arrowheads. The coarse grain and refractory nature of most of the materials, however, rendered impossible the refined work which was produced in the areas to the west. Deposits or caches of large chipped blades, mostly of the narrow oblong type, have been found at many points throughout the area. The spear was not in general use on the arrival of the whites, the bow and arrow, the tomahawk (celt-hatchet), and club being the principal weapons. Dugout canoes and canoes of bark were in use, and occasional examples of the former have been uncovered in recent years. Petroglyphs of primitive type are found in all sections. The most noted example is that of Dighton Rock, Massachusetts, which has greatly puzzled antiquaries and has been the subject of much controversy.

Relics of stone and bone, believed to have had their origin in glacial and early post-glacial times, have been collected in the Delaware valley and elsewhere, but geologists are not yet agreed as to the exact age of the formations with which most of the objects are said to be associated. These artifacts are not specifically different from those of the Indian tribes, and whether they represent an earlier and a distinct culture from that of the remains of the region generally seems to be an open question. The possibilities are that, howsoever ancient the older traces may be, they represent continuous occupancy of the area by the same or related tribal groups.

A few remnants of the original tribes, mostly of mixed blood, still live within the more easterly and southerly states, while a considerable body of the Iroquois remains in the valley of the St Lawrence. That the tribes of this great region should have remained always in a state of culture so primitive while other areas witnessed advancement must be attributed in large part to the forest environment. In both physical and intellectual attributes they had few superiors on the continent.

Explorations have been conducted in this area by numerous students, prominent among whom are Kain in New Brunswick; Boyle and Laidlaw in Canada; Willoughby, Putnam, Cushing, McGuire, and Moorehead in Maine; Putnam and Chase in Massachusetts; Perkins in Vermont; Haldeman, Mercer, Holmes, and Wren in Pennsylvania; Beauchamp and Harrington in New York; Rau, Abbott, and Volk in New Jersey; McGuire, Holmes, Fowke, Dinwiddie, Kengla, Reynolds, and Proudfit in the District of Columbia and Virginia; Thomas, Holmes, and Bushnell in the Carolinas.

Early observers embodying in their works important data regarding the aborigines of the region are White of the Roanoke colony, Smith, Strachey, and Hariot of the Virginia colony, Burk, Beverley, Jefferson, Heckewelder, Kalm, Holm, Lawson, Adair, Bartram, and others.

THE GEORGIA-FLORIDA AREA

This area includes the Florida peninsula and part of southern Georgia. The aboriginal occupants, so far as known historically, were mainly of the Muskogean and Timuquan stocks, a remnant of the former only, the Seminole, remaining in the peninsula today; and since the antiquities show no radical diversity of characteristics they may safely be assigned, in large part at least, to the ancestors of these groups. A colony of Cuban Arawak is said to have settled on the west coast of Florida in comparatively recent times, but no very distinctive traces of their presence have been observed. The early literature of the region, summarized by Brinton in *Notes on the Floridian Peninsula*, supplies many interesting details of the vanished peoples.

The antiquities of the area are somewhat distinctly set off from those of the North Atlantic area, but graduate almost imperceptibly into those of the Gulf states to the west and the great Mississippi valley area on the northwest.

Shell-heaps, often of remarkable extent, occur along the Atlantic and Gulf coasts, and on the river banks and lake shores. Some of these remain as originally deposited, while others have been more or less remodeled for purposes of dwelling, observation, or defense. Burial mounds, principally of earth and sand, are very numerous. The houses, built of poles and thatch, arranged often in circular village groups and surrounded by palisades, have left but meager traces. Communal houses mentioned by Cabeza de Vaca were so large that they "could contain more than 300 persons." The researches of Cushing demonstrated the fact that pile dwellings were in use along the Gulf coast, and also that canals and "water courts" were dug to accommodate the canoes of the villagers. Agriculture was practised in favorable localities, as recorded by the early explorers.

Knowledge of the native culture is obtained largely through a study of the contents of the burial mounds and shell-heaps, and more especially through a study of the earthenware, which is very plentiful and presents numerous features of interest. The forms were often pleasing, and in the west life forms were modeled with considerable skill. The figured stamp or paddle was employed in decorating the surfaces in the east and north, while engraved and indented designs are most common in the west. Curvilinear designs and peculiarly conventionalized life forms prevail, and some of these are thought to suggest Middle American influence. The use of color was elementary. Owing to the meagerness of sculptural remains pottery takes the place in large measure of stone art as a means of determining the culture status of the people.

The remarkable finds of Cushing in an ancient village site on Key Marco which, through the accidental inclusion of articles of wood, bone, and shell in deposits of muck in an old canal bed, give us a most instructive and interesting glimpse of the Gulf coast culture of which otherwise we should have remained in almost

total ignorance. The ceremonial masks, figurines, implements, and other carvings in wood, and the conventional and highly symbolic embellishments in color indicate a degree of artistic accomplishment not suggested by the few articles of stone and pottery found in the same connection or, for that matter, elsewhere in the south or west. That artistic development of such pronounced characteristics should be possible, practically without the aid of stone, is a matter of much interest to the student of culture history. It is probable that the culture was exotic in some measure. Implements of shell and sharks' teeth appear to have been the main reliance of the craftsmen of the keys.

Flint occurs in association with the extensive limestone formations of Georgia and northern central Florida, and was utilized by the natives in the manufacture of chipped implements of all the usual varieties; their abundance in Georgia is phenomenal. Varieties of stone usually employed in the manufacture of pecked-ground implements do not occur in the area, and implements of this type are comparatively rare with the exception of the celt which is found in large numbers in mounds and graves and on village sites; the grooved ax is of rare occurrence, a noteworthy circumstance since it is observed that this implement is abundant in the northern portions of most of the Gulf states and in intimate association with the celt. Moore's great collection of relics from the peninsular region includes hundreds of celts but not a single typical or fully specialized grooved ax. It is observed that while the celt is found in great numbers in the adjacent West Indies, the grooved ax does not occur there, the ax of the islands being of a totally distinct type. It is further observed that the celts of the Florida region approximate more closely those of the West Indies than do those of any of the more northerly districts, suggesting intrusion from that direction. An examination of the material of which they are made may serve to throw needed light upon their history.

Mortars and pestles of stone are of rare occurrence. Wood was in common use for these utensils, and examples of mortars and pestles, as well as dishes, stools, masks, and figurines, of this material,

exceedingly well made, were recovered by Cushing from the canal muck at Key Marco.

Numerous ornaments of gold and silver have been found in the peninsula. It is quite possible that some of the more elaborate pieces reached the peninsula from Mexico or Central America subsequent to the Columbian discovery, but that the native metal workers were highly skilled is amply shown by numerous examples of the overlaying of wooden ornaments and objects of bone with sheet copper and by certain plates of sheet copper collected by Moore which display symbolic devices executed repoussé fashion with much precision.

Burial places and mounds yield a rich harvest of relics. A feature peculiar to the peninsula is the inhumation with the dead of great numbers of crudely shaped objects of baked clay, vessels of fanciful shapes, and rude images of creatures and things real and fanciful, manifestly intended for no other purpose than as mortuary offerings. Urn burial, common in Georgia, was rare on the peninsula.

Decided relationships with the culture of Yucatan and the West Indies have been looked for in vain, yet certain analogies more or less pronounced do occur in pottery forms and decoration, in implements of stone and wood, and in the treatment of metals. The relationships are not intimate, but a glance at the general facies of the antiquities leaves the impression of trans-Caribbean kinship, which fades out as we penetrate the interior. A suggestion of cultural connection with South America is found in the frequent occurrence in this and other Gulf states of a perforated hoe-shaped stone implement which corresponds closely with a type of ax prevalent in South America. It is believed to have had only a ceremonial use north of the Gulf.

There has been some discussion of certain supposed evidences of the geological antiquity of man in Florida based on the discovery of human skeletal remains, apparently fossilized, embedded in geological formations in the western part of the state, but it has been shown that the age of these deposits is recent, the appearance of petrification being due to the coating and infiltration of cal-

careous and ferruginous matter present in solution in percolating waters. The most remarkable evidence of age is that furnished by the shell deposits, which are of great depth and horizontal extent and include varieties of shells not now prevalent on the coasts.

The superiority of the culture of this area over that of the North Atlantic region is manifest, especially in skill in the potter's art and in the manipulation of metals. On the whole, considering all branches, the material culture of typical centers differs but slightly in state of advancement from that of corresponding centers in the Mississippi valley. In some respects it is decidedly inferior to that of the more advanced culture centers of the West Indies.

The leading explorers of the antiquities of the Georgia-Florida area are: Brinton, Wyman, Webb, C. C. Jones, Bartram, Cushing, Moore.

THE MIDDLE AND LOWER MISSISSIPPI VALLEY AREA

The very extensive interior region, which comprises the middle and lower portions of the Mississippi valley with much outlying territory, was the seat of a remarkable group of peoples whose culture, all things considered, stands higher than that of any other characterization area north of Middle Mexico. This culture was characterized by well established sedentary life, extensive practice of agricultural pursuits, and construction of permanent works—domiciliary, religious, civic, defensive, and mortuary, of great magnitude and much diversity of form. The people, some if not all of whom were mound builders, were of numerous linguistic stocks, principal among which were the Siouan, Algonquian, Iroquoian, Muskogean, Tunican, Chitimachan, and Caddoan; and these historic peoples, remnants of which are still found within the area, were doubtless preceded by other groups not of a distinct race but probably of the same or related linguistic families. This view, in recent years, has gradually taken the place of the early assumption that the mound culture belonged to a people of high cultural attainments who had been succeeded by the Indian tribes. That mound building continued down to the period of European occupancy is a well established fact, and many of the burial mounds contain as original inclusions articles of European make.

Traces attributed to very early occupants of the area have been reported from time to time, especially the osseous remains of man found in association with remains of the mastodon and mammoth. In nearly every instance, however, subsequent observations have thrown serious doubt upon the authenticity of the original association. A human skeleton, found recently embedded in terrace deposits near Lansing, Kansas, is assigned by some authorities to the Iowan phase of the glacial period, while others regard the inclusion as more recent. Certain relics of stone, attributed to glacial times, have been found in the Ohio and Mississippi valleys, and these await fuller investigation. Numerous crania of primitive type have been collected from ancient sites in the Missouri valley and claims to geological antiquity have been promulgated, but Hrdlička has shown that this type occurs among the modern tribes of the area. The region abounds in caverns, and many of these contain traces of occupancy, but none so far examined seems to include in their floor deposits remains of other than the well-known culture products of the Indian tribes.

Unfortunately for the antiquarian of today the peoples of this area did not construct their buildings of durable materials, and nothing is left to us of their architectural achievements save such works as employed earth and loosely laid stones. These works are now mere unshapely mounds and embankments. The buildings of the Natchez and other tribes of the south have been described by early writers, though imperfectly. The walls were often of wattle-work faced with plaster, and the roofs were of bark and thatch. Little that is specific can be ascertained regarding the character of the buildings which must have crowned such great mounds as those of Cahokia and Etowah, or as were associated with such remarkable works as those of Marietta, Newark, and Fort Ancient. Stockades often supplemented the embankments in defensive works and served to protect the villages from intruders. Modes of burial within the area were extremely varied, and a vast body of the minor works of the people were deposited as offerings with the dead in ordinary cemeteries, in stone graves of several types, and in earth and stone mounds. Shell-heaps, composed mainly of mussel

shells, border the rivers in some sections. They contain relics of art of the varieties prevalent in the respective localities.

The lithic arts were wonderfully diversified and in some respects highly developed. Sculpture of the human figure had, however, made but slight advance, save in connection with the carved tobacco pipes where much skill is shown. The mineral resources, in which the region is extremely rich, were well exploited and extensively utilized. Stone was employed in a limited way in building walls and fortifications and in the construction of graves, and desirable varieties were quarried on a large scale for the manufacture of implements, utensils, and objects of faith, ceremony, and ornament. Heavily bedded chert deposits were worked in Ohio, Arkansas, Kentucky, Georgia, and Missouri; nodular cherts in Indiana, Illinois, Kentucky, and Tennessee; and hematite ore for implements and ochre for paint in Missouri. The ice sheets of the glacial period brought down vast bodies of detritus from the far north, filled with fragments and rounded masses of granitic and other durable rocks which were utilized by the inhabitants of the region. Copper from the Lake Superior mines had taken an important place in the arts and much skill was shown in its manipulation by maleating processes. The tribes of the middle region, the greatest of the mound builders, mined mica in western North Carolina, and the evidences of their operations are of astonishing magnitude.

As a result of the mineral riches of the area, the range of lithic artifacts is greater than in any other region north of the valley of Mexico. By the fracture processes vast numbers of cutting, scraping, boring, piercing, digging, and hammering implements were manufactured. The sword-like blades of Tennessee approach the highest place among American chipped products, and the agricultural implements of the Illinois region constitute a unique and remarkable class without parallel in any country.

The large class of implements and other articles shaped by pecking and grinding processes, often as secondary to chipping, is of great archeological interest. The grooved axes, celts, adzes, and chisels are of superior make, and the discoidal chunky stones,

tobacco pipes, bannerstones, and other objects of faith and ornament are remarkable for their perfection of form and high degree of finish.

Among the specially noteworthy features of the area are the caches or hoards of stone implements employed as mortuary offerings. Perhaps the most remarkable of these hoards is a deposit of many hundreds of obsidian implements found in an Ohio mound; the beautifully made implements are of unique shapes and were not designed for use, but as offerings merely. They had been transported from unknown sources in the Rocky mountains a thousand miles away, or from California or Mexico. A single deposit in a mound at Hopewell, Ohio, contained upward of 8000 well-made disks of flint of large size. There are also the hematite objects of the central districts; the pigment palettes of Alabama; the engraved shells, and the sculptured utensils and idols of the middle districts; the skilfully executed implements and ornaments of copper; and the remarkable and very puzzling repoussé figures in sheet copper obtained from mounds in Georgia and Illinois. Among the most noteworthy examples of the handiwork of the mound-building peoples are certain relics obtained by Putnam from the Turner group of mounds in Ohio.

Some of the tribes were excellent potters, and the elaborately painted vases and effigy vessels of the middle Mississippi region and the scroll decorated vessels of the lower Mississippi and Gulf coast evince excellent taste and great skill, falling short, however, of the achievements of the ancient tribes of the arid region in some important respects. The stamp decorated ware of the south Appalachian region is of much interest.

It is observed that the culture of this area in certain of its typical phases extends down to the Atlantic in Georgia, blending with that of the Florida area and to the Gulf in Alabama, Mississippi, Louisiana, and Texas. It has much in common with the culture of the upper Mississippi and Great Lakes region, and grades somewhat abruptly into the culture of neighboring areas on the east and west. Although presenting a certain degree of homogeneity throughout, this area is by no means a simple culture unit.

There are a dozen or more somewhat localized centers of development and differentiation, no one of which could in the present state of our knowledge be safely selected as a type for the entire area. Aside from the more typical forms of culture there are limited areas in which very primitive conditions seem to have prevailed down to the coming of the whites. There are some indications of culture relations with Mexico; among these are similarities in the arts as in certain sculptured figures and engraved designs on shell ornaments and pottery, but as a whole the cultures stand well apart.

This area has been the field of extensive though somewhat scattered research. Some of the more important explorations are those of Tomlinson, Squier and Davis, Force, Putnam, Moorehead, Mills, Fowke, Thomas and his assistants, Phillips, Thruston, Moore, Jones, Peet, Whittlesey, MacLean, Holmes, and Metz.

THE UPPER MISSISSIPPI AND GREAT LAKES AREA

The upper Mississippi and Great Lakes region is not very sharply differentiated from the neighboring areas either in its aboriginal inhabitants or its culture, ancient or modern. The historical tribes are of the Algonquian and Siouan stocks, and important communities of the former are still found within the area. The ancient culture is about on a par with that on the east and in some respects is inferior to that on the south. Hunting, fishing, and seed gathering were the leading avocations of the people, but agriculture was practised in favorable localities and the so-called garden beds of Michigan are among the most novel features of our northern archeology. Burial mounds of ordinary forms are widely distributed and monumental features of unique type abound. The latter include groups and chains of earthworks in formal and puzzling arrangements, and numerous animal-shaped mounds, confined largely to Wisconsin, and supposed to have had some important sacerdotal function.

The area has within its borders two features of exceptional interest: the ancient copper mines of the Lake Superior region and the catlinite or red pipestone quarries of southwestern Minnesota. The sites of the copper mines are marked by extensive pittings

made in exposing the copper-bearing rocks and breaking them up to release the masses of native copper. This work was accomplished mainly with heavy boulder hammers obtained from the lake shores and by the aid of fire. Thousands of these hammers are found in and about the old pits, occasional specimens being grooved for hafting. The copper was worked up into implements, ornaments, and objects of faith of great variety which are found, especially associated with burials, throughout the United States. The implements employed in quarrying the pipestone were tough fragments of quartzite rock, roughly shaped for the purpose. The old excavations extend along the narrow outcrop for nearly a mile across the smooth surface of the prairie. The articles made from the catlinite were tobacco pipes, ceremonial objects, and ornaments, and these were distributed and used as was the copper over a large part of the area now known as eastern United States.

The stone utensils of the area comprise rude mortars and pestles, the latter of the cylindrical type, and the pecked and ground implements include grooved axes, celts, adz blades—rarely of gouge shape—tobacco pipes, tubes, and the usual range of ceremonial and talismanic objects. The fluted ax and the faceted celt are peculiar to the area. Deposits of flint were worked in many places and chipped implements of usual types are exceedingly plentiful.

Quartz veins were worked at an early period about the Little Falls of the Mississippi, and crudely chipped artifacts are found in flood-plain deposits of the vicinity which are regarded by some geologists as having been laid down during the closing stages of the glacial period.

The pottery of the area is of distinctive types and generally more primitive in make than the ware of the south. In some sections the pots are carefully finished and decorated with incised and indented figures, but painted specimens are rare.

A most noteworthy feature of the region is the manufacture in recent years of many false antiquities of peculiar type, purporting to represent early occupancy of the country by Old World peoples.

Explorations have been conducted within the area by Catlin, Latham, Winchell, Brower, Brown, Hamilton, Phillips, Smith, Holmes, and many others.

THE GREAT PLAINS AND ROCKY MOUNTAIN AREA

Traces of the typical culture of the agricultural mound-building peoples of the Mississippi valley fade out gradually as we traverse the great plains which extend westward to the Rocky mountains. The region generally is not well suited to primitive agriculture, and, abounding in game, it encouraged a nomadic rather than a sedentary life, although several stocks—Siouan, Algonquian, Caddoan, Athapascan, Shoshonean, Kiowan, and others—claimed and permanently occupied somewhat definite areas. Agriculture was practised in a limited way in some of the more easterly valleys. There were no buildings that could be called permanent, although many hut rings, house depressions, and small mounds, the last being the remains of earth lodges, occur on the old village sites, and burial mounds are not of infrequent occurrence in some of the principal valleys. The dwellings of the less sedentary tribes were made of the dressed skins of animals, especially the buffalo, which overran the region in vast herds.

Quarries of flint with associated sites of manufacture are found in Oklahoma, Kansas, and Texas, and of quartzite and soapstone in Wyoming. Obsidian is plentiful in the Yellowstone park and in the upper valleys of the Snake river, and was much used locally. The obsidian implements found occasionally in the eastern states may have come from this region. The population was sparse, the activities restricted, and as a consequence the varieties of well specialized artifacts were limited in number. The more essential stone implements of the hunter tribes, the projectile points, knives, scrapers, hammers, and club-heads, are very generally distributed, while other forms are comparatively rare. An implement of much importance to the hunter tribes was the heavy grooved hammer so useful in killing and breaking the bones of large game, in driving stakes, and in pounding seeds and pemmican. It is probably the most typical and characteristic of the stone implements of the plains and mountains of the middle region. A powerful weapon was a hafted hammer, probably of somewhat recent introduction, called *pogamoggan* by some of the tribes. These two hammers were the principal articles of the pecked-ground variety of the

region, although implements of other classes and even objects devoted to sacred and ceremonial use occur here and there in the valleys. Similar lithic conditions prevail in the mountains and valleys north of the arid region, west to the Sierra Nevada and indefinitely toward the north. There are some traces of the spread of the characteristic implements of the arid region, especially the metate and muller, toward the north beyond Salt Lake and to the east over the great plains even as far as the Ozarks, and there is a noticeable overflow of the types of artifacts characterizing the middle Pacific slope into the upper valley of the Missouri. Among these latter objects are straight, tubular stone tobacco pipes and paddle-shaped stone clubs. These intrusions are probably due to the Shahaptian stock, whose habitat extended from Oregon and Washington well over into the valley of the Missouri. Two remarkable discoveries within the region are a deposit of nearly a thousand flint implements obtained from a sulphur spring at Afton, Oklahoma, and a cache of thousands of arrowheads in Delaware county, Oklahoma. Large areas along the eastern border of the plains that were formerly occupied by sedentary, mound-building peoples, had become, through the invasion of the buffalo, the hunting grounds of the so-called wild tribes. Pottery, the safest index of the stable status of a people, is somewhat rare in the area save in the more easterly valleys, and where found it is of the simplest culinary type.

Collections from this great area are comparatively limited, and large tracts of the territory have received almost no attention on the part of archeologists.

Claims to great antiquity in this grand division are based on reported finds of stone implements associated with fossil mammal remains in the loess formations, on a small figurine of baked clay known as the Nampa image found in Idaho, and on an obsidian blade from Nevada. It is a most remarkable fact that the image which is assigned tentatively to the Tertiary or early Quaternary, is probably the most mature example of modeled human figurine yet found west of the Missouri.

Naturally the antiquities on the southwest border affiliate in

numerous features with the art of the Pueblo region and in the Far West with the remains of the California and Columbia-Fraser areas, but the general state of culture has been everywhere about the same and closely akin to that of the historic and the present time in the same area.

The principal scientific explorations of the region are those of Dorsey, Smith, Holmes, Norris, Brower, Winchell, Montgomery, Leidy, McGee.

THE ARID REGION

This area includes New Mexico and Arizona, and portions of Utah, Colorado, Nevada, and Texas. It is in the main a region of plateaus, canyons, and cliffs; of limited fertile areas bordering stream courses, and broad stretches of arid semi-desert. Contrasting thus strongly with neighboring areas, it has induced a culture peculiarly its own. The cliffs abound in caves and deep recesses well adapted for habitation, and the improvement of these for dwelling probably led to the intelligent use of stone in building, with the result that the building arts were more highly developed than in any other section north of middle Mexico.

That the region has been occupied for a long period is amply attested by the occurrence of great numbers of ruins of substantial structures, cliff-dwellings, and plateau and lowland pueblos scattered broadcast over the territory. Reservoirs and extensive traces of irrigating canals attest the enterprise of the people. That the present town-building tribes are the descendants of the ancient peoples is indicated by tradition, by skeletal evidence, and by material culture. The past connects with the present without perceptible break, and the implements and utensils of today are, save for the intrusive elements of white civilization, the implements and utensils of the past. The town-building peoples belong to a number of linguistic stocks,—Shoshonean, Zuñian, Tanoan, Keresan, Piman, and Yuman,—and aside from these a number of non-townbuilding tribes occupy the region,—the Ute, Paiute, Navaho, and Apache,—the range of whose lithic arts is quite limited, agreeing somewhat closely with that of the hunter tribes of the plains and mountains.

Four types of dwellings are noted: concrete, as in the Casa Grande ruins in Arizona; adobe bricks, as in parts of New Mexico and Arizona; masonry, throughout the region; and excavated, as in Colorado, New Mexico, and Arizona. The cliff-dwellings are of great interest and are single houses, small groups, and, in cases, villages capable of accommodating hundreds of people. Generally they occupy picturesque and almost inaccessible niches in the canyon walls. The plateau and cliff sites were often selected with a view to defense, and the lowland pueblos were practically fortifications. The outer walls were unbroken save by a single doorway, while entrance to the dwellings generally was from the inner court by way of the roofs of the first story. In many places steep ascents and narrow passes were defended by low walls of rude masonry, and it is assumed that the round and square towers found in some sections were designed for observation and defense.

Aside from the buildings and excavated dwellings, other features of the lithic art of the region, although distinctive, are in no case markedly superior to corresponding features of neighboring areas. Nearly all implement types are in present use or have been in recent use by the tribes, and the practice of gathering and using stone implements from the ancient sites has been so general that the old and the new are not separable, and references of implements or other relics of art to particular tribes, ruin groups, or districts must be made with caution. The mealing stones, especially the metate and the muller, though plain slabs or shallow troughs, are well made, and the numerous small mortars and pigment plates are sometimes carved to represent serpents, birds, and other animal forms. The carving of animal fetishes is a noteworthy feature, particularly of the modern art, but the work is not of a high order of merit. Attempts at representing the human form are exceedingly crude. The most ambitious sculptural effort of the region is exemplified in the figures of two crouching mountain lions worked out life-size in the rock in place near Cochiti in the Rio Grande valley, but these figures have been so mutilated that it is difficult to determine their original merit as works of sculpture.

Receptacles of stone, aside from the mealing stones and mortars,

are rare, their place having been taken by products of the potter's art, which are abundant and of superior quality, and remarkable for varied and tasteful decoration. The potter's art had reached a degree of perfection not greatly surpassed elsewhere in America, certain groups of the ware displaying grace of form and beauty of decoration advanced apparently far beyond the attainments of the people in other directions.

The minor stone implements of the area correspond in grade somewhat closely with those of the middle and eastern states and the Pacific slope, but the gouge, celt, chisel, and perhaps other forms are absent; while a few are peculiar to the area, as the spatulate celt and the sandal last. The grooved ax takes the most prominent place, and in form, finish, and effectiveness as a stone-age cutting tool is rarely surpassed. Numerous axes of exceptional interest are quite distinct in type from the ordinary ax and are made of fibrolite, a handsome mineral of great toughness and hardness which is rarely found elsewhere. Implements for straightening and smoothing arrow-shafts are quite numerous and exceptionally varied in shape. A group of spatulate implements of jasper, resembling somewhat closely the celt of the East, is of special interest. Although it is referred to by the natives as an agricultural implement, its modern use, according to Fewkes, is entirely ceremonial. In one instance this explorer found twelve of these implements among the sacred paraphernalia of a Hopi altar. The present writer found one embedded in a bin of charred corn in a cliff-house on the Rio Mancos. Hammerstones of all ordinary varieties are present in large numbers, and abrading stones and polishing implements are of common types. Chipped implements—arrowpoints, spearheads, knives, scrapers, and drill-points—are of usual types and are not very abundant or especially noteworthy. The materials used include obsidian, jasper, and many varieties of chalcedony. Great skill was evinced in the manufacture of beads and other small trinkets, the boring being done with the pump drill. Bone was much used for awls, and shell for ornaments. The bow and arrow was the principal weapon, while the atlatl, or throw-stick, was in pretty general use.

Mines of turquoise were worked extensively in New Mexico, Nevada, and Arizona. This semi-precious stone was used for ornaments and especially for inlay or mosaic work, some very attractive specimens of the latter having been collected, and it was distributed by trade to distant parts, even to Mexico. There are few traces of the working of metals, the silversmith's art of recent times having been introduced by the Spanish, and the copper bells occasionally found are probably of Mexican origin. The weaving arts and basketry were practised with much skill.

In three important branches of material culture—the ceramic, the textile, and the stone-building arts—this area stands far above any other north of middle Mexico. Little evidence of great antiquity beyond that furnished by the complex cultural conditions and innumerable deserted dwelling places and acequias has been found.

Among those who have contributed observations of scientific value regarding the antiquities are: Blake, Cope, Powell, Cushing, Fewkes, Bandelier, Matthews, Hewett, Russell, Hodge, Holmes, Hough, Jackson, the Mindeleffs, Nordenskiöld, Stephen, Pepper, the Stevensons, Wheeler, Whipple, Simpson, Morgan, Dorsey, Bartlett, Voth, Bourke, Prudden, Kidder, N. C. Nelson.

THE CALIFORNIA AREA

Notwithstanding the diversified physical characters of the state and the extraordinary assemblage of linguistic groups within its limits, the culture of California was and is uniformly primitive. At the same time it is set off with remarkable distinctness from the equally primitive cultures of other areas, especially those of the Atlantic side of the continent. In the desert and semi-desert regions of the extreme south and in northwestern Mexico, occupied mainly by the Yuman stock, an exceptionally primitive state of culture prevailed, as graphically depicted by Father Baegert in his report dated 1772, and by McGee in the *17th Annual Report of the Bureau of American Ethnology*. It is observed that the Santa Barbara region, including the islands off the coast, was in early times the center of a somewhat exceptional

development in certain branches of handicraft and especially in the working of stone, while more primitive but kindred conditions prevailed to the north and east throughout California.

The lithic antiquities of the Santa Barbara district, which are attributed in large part to the Chumashan group, are characterized by great numbers of well sculptured domestic utensils—bowl-shaped mortars, and long, graceful pestles of sandstone, globular cooking pots, rectangular and ovoid baking or boiling plates, tubular tobacco pipes of steatite, and polished bowls and cups of serpentine. The quarries from which the materials were obtained are situated partly on the mainland, but principally, it is believed, on the islands off the coast. The shell-heaps and village sites of the mainland and of the islands have been examined by Schumacher, Bowers, Nelson, and members of the War Department surveys, and the quarries of Santa Catalina island have been described by Schumacher and the present writer. Contrasting with the thin-walled bowl-like mortars of this district and the slender, graceful pestles associated with them, are the heavy, globular, conical and cylindrical mortars, the numerous mortars and clusters of mortars worked in outcropping rock masses with their heavy cylindric pestles, and the metate slabs with their flattish mullers which occur in great numbers in many sections.

Bone was much used for piercing implements and ornaments. The beautiful shells of the coast—especially the *haliotis* and large clam—were a favorite material for the manufacture of personal ornaments, and the dentalium and other of the smaller shells served as ornaments and as a medium of exchange.

In the middle and northern districts obsidian is plentiful, and chipped implements made of this material are found in great numbers. The large knives, some of which measure two feet or more in length, are marvels of the flaking art, and are second in this respect in North America only to the slender flint blades of Tennessee. There are also superb flint blades in some localities, and arrow-points and spearheads of exceptional beauty are found, their manufacture having continued in some sections down to the present day. Other features deserving special mention are the perforated digging

weights made of numerous varieties of stone, the hook-shaped carvings and the killer whale images of soapstone of the Santa Barbara region, and the plummet stones of middle California. Among the unique objects are specimens of boat-shaped and banner stones (imperforate) of eastern type also found in middle California. It is a remarkable fact that the grooved ax, the celt, and the gouge, implements of so much importance in eastern areas, do not occur, or are found but rarely, on the Pacific slope; the small adz blades take, in a measure, the place of these tools.

The dwellings were of grass, brush, bark, and earth, and in the north were to a limited extent of slabs of wood. The floors were sometimes excavated to slight depths, and the more primitive structures were often covered with earth. Absence of stone building in the area and the practical absence of pottery are in striking contrast with the well matured state of these arts in the arid region on the east, shortcomings which, notwithstanding the well-made utensils of stone and the exquisite basketry and shell and bone work of California, place the Pueblo culture on a considerably higher plane than that even of the most advanced group of the Pacific states. The practice of agriculture gave the Pueblo people a decided advantage over the non-agricultural peoples of the coast, whose chief food resource, aside from the products of the chase, consisted of acorns, seeds, and berries.

The handiwork of the tribes of the coast merges with that of the inland valleys and ranges, and this blends in turn with the culture of the Sierra, and the basin range region to the east. The transition between the culture of southern California and that of the Pueblo region is decidedly abrupt, although the somewhat recent coastwise extension of the Shoshonean stock from the east has resulted in limited blending. The transition to the north is gradual, the disappearance of the oak being responsible for marked changes in the activities and manner of life of the people.

A most extraordinary feature of California archeology is the occurrence of articles of stone—mortars, pestles, and other objects of kindred culture grade, as well as fossil human remains—in the gold-bearing gravels of the mountain valleys, numerous specimens

having been reported as coming from beneath beds of lava of early Quaternary or late Tertiary age. That the relics are old in cases can not be doubted, but their exact chronological place and value have not as yet been ascertained.

The most noteworthy features of Californian culture are entirely its own and are manifestly due in great measure to the molding influences of the environment. The acorn is probably responsible for the wonderful development of the mortar and pestle, and deposits of soapstone have made possible the unique cooking pots and other noteworthy features of the native handicraft. The art of basketry was remarkably developed and retains its superiority to the present day. Watertight baskets and utensils of stone took the place of earthenware.

It is interesting to note that, beginning in middle California, the status of culture as represented by art works rises gradually as we pass to the north through Oregon, Washington, and British Columbia, the culmination being reached with the tribes of the Northwest coast. In the south attempts to model or carve the human figure are unknown, while animal figures are of rare occurrence. As we advance toward the north, sculptures, human and animal, increase in number, and in British Columbia there is an extraordinary development of the sculptor's art culminating in the remarkable grave posts, masks, and giant totem poles. That Middle America has had no influence on the culture of this coast is apparent.

Considering all phases of their culture, the achievements of the California tribes must be regarded as inferior to those of the Gulf states, the Mississippi valley, the Pueblo region, and the Northwest coast, and even of the Eskimo of Alaska.

Among those who have conducted archeological investigations in California are: Whitney, Schumacher, Yarrow, Henshaw, Powers, Bowers, Holmes, Sinclair, Meredith, Terry, Yates, Palmer, Becker, Nelson, Rust, J. C. Merriam, and Skertchley.

THE COLUMBIA-FRASER AREA

The interesting region beginning in northern California and extending north to include the Columbia and Fraser valleys, pre-

sents diversified yet in a large way uniform culture phenomena. Owing to the somewhat marked differences between the coastal environment which is moist, and rich in forests, and the interior which assumes generally a semi-arid aspect, the material culture, ancient and modern, presents numerous minor differences. Naturally the inland culture graduates into that of the plateau and mountain region on the east. It is not separated very definitely from California on the south, but presents strong contrasts with the culture of the Northwest coast.

The inhabitants of recent times comprise numerous stocks and tribes of primitive culture whose chief dependence was and is hunting and fishing and the natural supply of seeds, nuts, fruits, and roots. In the south the acorn was a principal article of diet. Their better houses were of wood and earth, and have left few traces save the shallow floor excavations with accompanying heaps and ridges of earth, and in the arid interior the earth-rings which mark lodge sites. Along the shores are numerous shell-heaps, the industrial contents of which agree with those of the general region save in so far as differences have resulted from differences in environment. Eells mentions burial mounds in the Willamette valley which yielded a wide range of the ordinary local relics, besides, in cases, glass beads and articles of iron. Chase examined certain mounds on the coast in southwestern Oregon with similar results. Earth-works and simple fortifications are mentioned by both explorers. Numerous cemeteries have yielded many relics of art of all classes. Rock carvings are generally distributed over the area.

The relics of stone seem to tell a consistent story of ethnic conditions varying but little from that of historic times. Certain forms of implements and objects of sculpture characteristic of California extend to the north throughout the entire length of the area, while other forms characteristic of the Northwest coast extend far to the south. Deep globular forms of mortars prevail in some sections, and metates are found in others. The pestles in certain regions are of the oblong-club shape, often well finished and even tastefully carved, while in others they are ovoid or flattish, often merely adapted boulders. All were used as hammers on occasion.

Tobacco pipes, straight in the south and bent tubes and other forms in the north, are mentioned. The grooved ax and celt are absent, the adz blade taking the place of these forms here as elsewhere on the Pacific slope. Dishes, slate knives, sinkers, wedges of antler, abrading stones, scrapers, drills, arrow-shaft rubbers, and clubs (the latter of bone and stone), and projectile points and knives are found in numbers.

Among objects of exceptional types may be mentioned large obsidian ceremonial blades in the south, batons of stone or bone carved to suggest or represent animal shapes, weight-like stones with loop for suspension, and some curious carved heads which have been regarded by some as intended to represent apes. The latter, although not carvings of particular note, find no counterpart in any portion of North America.

Detailed study of this region would, perhaps, as in other cases, require its separation into two or more minor environments, but the blendings of the material culture are so intricate that conclusions of value can not be reached until further field investigations are made.

There appears no certain evidence of the presence in early times of peoples distinct in character and culture from those of the present. The valley of the Columbia is given an important place in the ethnic history of the continent by Morgan who imagined it was a kind of hot-house, the multiplying peoples of which spread out over the south and east; but slight evidence has been found to support this hypothesis. Certain finds of supposed geologically ancient human remains and culture traces have been reported, but none of these have so far been fully authenticated. If, however, geologically ancient man did occupy the continent, the valley of the Columbia ought to be a very promising field for the preservation and discovery of the record.

Explorers of the region include Schumacher, Eells, Smith, Boas, Terry, Dawson, Morice, and Chase.

THE NORTHWEST COAST AREA

This area comprises a rather narrow strip of the mainland and the contiguous coastwise islands in British Columbia and Alaska,

and extends from Puget sound on the south to Mt Saint Elias on the north, a distance of twelve or thirteen hundred miles. The present tribes belong to half a dozen stocks, well differentiated in physical characteristics from the Eskimo, with whom they come in contact on the north, and differing somewhat decidedly from the Indian tribes on the east and south. The material culture embodies many noteworthy and exceptional features and, as a whole, stands well apart from all other areas of the continent. It affiliates in some respects with that of the coast culture on the south and with the inland culture on the east. Hunting and especially fishing are and have always been the chief food resources of the people, agriculture being unknown. The area abounds in splendid forests, and the people have developed exceptional skill in carving wood, originally with stone tools, and later in greater elaboration with implements of iron and steel. The dugout canoes are often of great size, beauty, and seaworthiness, and are probably the world's highest achievement in this direction. Not less worthy of mention are the substantial houses of hewn timbers, and the totem poles, house posts, grave posts, human and animal effigies, and various utensils, masks, and other objects carved with a skill and boldness that would do credit to any people. Although it must be allowed that these results are due in a measure to the acquirement of white men's tools, it can not be denied that the people are endowed with a genius for sculpture without parallel among the tribes of northern America. Their skill in carving extended to stone, shell, bone, and horn, and to a wide range of minor articles of use, ornament, faith, and ceremony. The artifacts of stone include hammers and mauls of the highest known types, adzes, mortars, pestles, knives, batons, tobacco pipes, amulets, ornaments, and other objects, but examples of chipped stone are of rare occurrence. Pottery is unknown, vessels of wood, bone, and horn serving in its place. Slate obtained from deposits on the Queen Charlotte islands has been much used in recent times for carving, and remarkable results are seen in miniature totem poles, boxes, dishes, pipes, and in diversified animal, human, and fanciful forms. Jade, found in the Frazer valley and probably elsewhere, was skilfully cut by primitive

abrading processes and shaped into tasteful implements and ornaments. Much taste is shown in the inlaying of ornaments of bone and stone with the brilliant nacre of shells. Petroglyphs are numerous in some sections and probably date back to very early times, although they display the peculiar characteristics of the graphic art of the living tribes as embodied in painting, engraving, and weaving. Copper was and still is worked with considerable skill, and although the native metal occurs within the area, it is not known to what extent it was mined and utilized before the coming of the whites. Certain features of the arts—practical, religious, and ornamental—are thought to suggest inspiration from the Pacific islands, but if this is shown to be the case we shall still be unable to say whether that influence may not have been exerted exclusively during the rather long period since modern sea-going vessels began to ply back and forth on the Pacific. Traces of advanced Asiatic art are occasionally encountered along the coast, but these may be attributed to the stranding of vessels carried across the Pacific by the Japan current rather than to purposeful voyages in prehistoric times.

The peculiar geography of the country has doubtless served in conjunction with its exceptional vegetal and animal resources to develop the unusual ability and enterprise of the people. Indeed, if a greatly diversified coast line tends, as some have held, to accelerate the culture progress of peoples, the inhabitants of this region should rank high among American nations.

The archeologist can lay little exclusive claim to the antiquities of the region, since nearly all the known forms of native artifacts appear to have been in use since the coming of the whites, and these have given way only gradually to the encroachments of iron and steel. Scientific researches within the area have hardly touched the problems of antiquity, and no evidence serving to carry the history of man into the remote past has been obtained. The culture, so far as observed, appears to be decidedly homogeneous and with slight trace of antecedent forms of art either lower or higher than the historic. It is believed by some authorities that certain elements of the population entered the area from the high-

land valleys on the east. Although this region lies along the most likely trail of peoples entering America by way of Bering strait, nothing has been observed in the culture of the people suggesting migrations from the north, and no characteristic features that might not have arisen within the local environment or from possible intrusions within a few hundred years.

Original investigators of this area who have contributed information regarding the native culture and antiquities are Swan, Niblack, Boas, Emmons, Smith, Swanton, and others.

THE ARCTIC SHORELAND AREA

The arctic characterization area extends from Greenland on the east to farthest Alaska on the west, and from the tortuous northern shores of the continent somewhat indefinitely into the interior. Along the Atlantic and Pacific coasts the peculiar arctic culture shades off into the cultures of the south. Where not subject to the direct influence of other races, it is essentially Eskimoan in its prehistoric as well as in its historic phases, and the uniformity of the frigid environment and of the racial elements involved has resulted in marked uniformity of achievement throughout the area. Indeed, so all-impelling are boreal conditions that it would seem strange, since Bering strait does not interfere with free intercourse between the east and the west, did this uniformity not extend practically the entire length of the Arctic circle. The culture of the past merges into that of the present and archeological researches may be expected in time to contribute much of interest to the culture history of the area, at least of the more recent past. There is no doubt that marked changes have taken place in the arts and manner of life of such of the peoples as have come in close contact with the whites, but we may feel assured that their ingenuity and their exceptional dexterity in many directions are indigenous traits, developed largely as a result of long struggles with the exacting environment.

In these inhospitable regions shelter during the inclement seasons is an ever-existing necessity, but home-building had its severe limitations. Houses were built of driftwood, whale bones, stone,

earth, sod, and snow, and the sunken floors aided in making existence during the long winters bearable. Explorers find traces of these long-deserted structures and of storehouses and cairns scattered along thousands of miles of the frozen coast.

Fire for warmth and for cooking is a first consideration to dwellers in the arctic, and since oils and fats were the main dependence for fuel, the lamp filled an important place in every household. This useful utensil was made usually of soapstone. It is a remarkable fact that the lamp is unknown in any other part of America, while several forms are found in arctic Asia.

Hunting and fishing are and were always necessarily the almost exclusive means of subsistence of the people, and weapons and other devices for capturing game are among the most ingenious of their kind. In the west tough jades, the rare pectolites, and other hard varieties of stone were employed in making mortars, pestles, dishes, vessels for containing, hammers, adzes, chisels, picks, knives, whetstones, sinkers, tobacco pipes, and other implements and utensils. Hard, brittle stones, such as flint and slate, were wrought and skilfully shaped by fracture processes into knives, scrapers, drills, and projectile points, and the art is by no means a lost one at the present day. It is a noteworthy fact that, although great skill was shown in the shaping of stone by these processes, spear and harpoon heads, knives, and especially the woman's knife, were very often shaped and sharpened by grinding. Familiarity with this process in the shaping of bone and ivory would necessarily suggest its use in working stone. The grooved ax, celt, and gouge are absent from the area.

Stone was used also in the manufacture of personal ornaments, such as labrets, beads, ear-plugs, and pendants, some of these being unsurpassed for beauty of material and finish. Figurines, toys, fetishes, charms, talismans, and a multitude of other articles were also carved with great skill and in all available materials, and engraving of pictorial subjects of considerable merit is a distinctive feature of the more recent arctic art.

It is a remarkable fact that pottery was formerly in common use in the far north, especially along the coast as far east as Franklin

bay. The vessels, rather thick-walled, and generally of medium or large size, were probably intended for cooking and containing food, but are of good shape and tastefully ornamented with incised and impressed decorations. The pottery-making period is not yet determined, but the art appears not to have been practised in recent times, save in the manufacture of lamps.

As with many of the ethnic areas of America, the material culture of the present and past blend completely. The task of determining by a study of the antiquities the changes that have been wrought falls to archeology. The shell-heaps of the Aleutian islands have yielded data of interest regarding the problems of chronology, carrying the story back perhaps thousands of years. The Bering region is believed to be pregnant with historic interest—geological, geographical, climatic, and anthropological—to hold within its soil and more recent formations solutions of many of the problems of the American race—but the inquirer must wait.

A comparison of the culture of the Eskimo race with that of the other ethnic groups of the continent must result in giving this people an enviable place in the scale of intellectual achievements, but the environment has placed rigid limitations on the possibilities of accomplishment. However, the list of minor artifacts would probably be as long as that of any other northern American area, and many of the things are without corresponding features elsewhere.

Among the explorers who have contributed original information regarding Eskimo culture may be mentioned Dall, Murdoch, Nelson, Turner, Boas, Solberg, Rink, Mackenzie, Holm, Frobisher, Simpson, Krantz, Kane, Hoffman, Grenfell, and Stefánsson.

THE GREAT NORTHERN INTERIOR AREA

Archeologically the great interior region of British America is practically a negligible quantity. It may contain traces of early occupancy of deep interest to the historian of the race, but research has as yet made slight progress within its borders. It is assumed as probable that successive instalments of migrating peoples entered the gateway at the northwest and moved southward and eastward over the region, some remaining, unaware of better things,

others passing on to more genial climes. None appear, however, to have made a perceptible impression upon the face of the northern wilderness. Over a large part of the area, at least, all traces of very early occupancy, if such there ever were, must have been wiped out by the ice sheets which, one after another, swept southward over the country, the latest invasion in the central region continuing down to the period which witnessed the building of the Egyptian pyramids. Limited areas in the west and northwest were not thus invaded, but these have, as yet, yielded nothing of particular value to archeology. The extensive operations of the gold miners of the Yukon have, during twenty years of unprecedented activity, brought to light no trace of man or his works.

That the primitive Athapascan and Algonquian stocks—the caribou hunting peoples—have long occupied the region and have left the simple products of their handicraft on countless abandoned sites is safely to be inferred, but it is probable that past cultures did not in any instance rise above the level of the present. The researches of Mackenzie, Hearne, Morice, and others indicate the poverty of the historical tribes in manifestations of material culture, and the archeologist may expect to find little beyond artifacts of the simplest type—projectile points, knives, scrapers, abrading stones, hammerstones, boiling stones, and minor relics of other materials—merely such things as are necessary to the existence of hunter tribes. Traces of intrusive culture may be expected along the western and southern borders. The unfolding of the story of the past in this area must prove a tedious and almost thankless task. At any rate, it is apparent that in the present state of our researches this region will seldom be referred to in the discussion of the antiquities and culture history of the continent.

Explorers of this area who have made contributions to the history of early times include Mackenzie, Hearne, Morice, Hill-Tout, Dawson, and others.